



#12

1

## SEQUENCE LISTING

<110> ZHOU, MING-MING  
AGGARWAL, ANEEL

<120> METHODS OF IDENTIFYING MODULATORS OF BROMODOMAINS

<130> 2459-1-003 CIP

<140> 09/784,553

<141> 2001-02-16

<150> 09/510,314

<151> 2000-02-22

<160> 63

<170> PatentIn version 3.0

<210> 1

<211> 3014

<212> DNA

<213> Homo sapiens

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&lt;210&gt; 2

&lt;211&gt; 832

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2

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								20		25			30		

Pro	Pro	Ala	Pro	Pro	Gln	Gly	Ser	Pro	Cys	Ala	Ala	Ala	Ala	Gly	Gly
								35		40			45		

Ser	Gly	Ala	Cys	Gly	Pro	Ala	Thr	Ala	Val	Ala	Ala	Ala	Gly	Thr	Ala
						50		55		60					

Glu	Gly	Pro	Gly	Gly	Gly	Ser	Ala	Arg	Ile	Ala	Val	Lys	Lys	Ala
						65		70		75		80		

Gln	Leu	Arg	Ser	Ala	Pro	Arg	Ala	Lys	Lys	Leu	Glu	Lys	Leu	Gly	Val
						85		90		95					

Tyr	Ser	Ala	Cys	Lys	Ala	Glu	Glu	Ser	Cys	Lys	Cys	Asn	Gly	Trp	Lys
						100		105				110			

Asn	Pro	Asn	Pro	Ser	Pro	Thr	Pro	Pro	Arg	Ala	Asp	Leu	Gln	Gln	Ile
						115		120			125				

Ile	Val	Ser	Leu	Thr	Glu	Ser	Cys	Arg	Ser	Cys	Ser	His	Ala	Leu	Ala
						130		135		140					

Ala	His	Val	Ser	His	Leu	Glu	Asn	Val	Ser	Glu	Glu	Met	Asn	Arg
						145		150		155		160		

Leu	Leu	Gly	Ile	Val	Leu	Asp	Val	Glu	Tyr	Leu	Phe	Thr	Cys	Val	His
						165		170		175					

Lys Glu Glu Asp Ala Asp Thr Lys Gln Val Tyr Phe Tyr Leu Phe Lys  
 180 185 190  
 Leu Leu Arg Lys Ser Ile Leu Gln Arg Gly Lys Pro Val Val Glu Gly  
 195 200 205  
 Ser Leu Glu Lys Lys Pro Pro Phe Glu Lys Pro Ser Ile Glu Gln Gly  
 210 215 220  
 Val Asn Asn Phe Val Gln Tyr Lys Phe Ser His Leu Pro Ala Lys Glu  
 225 230 235 240  
 Arg Gln Thr Ile Val Glu Leu Ala Lys Met Phe Leu Asn Arg Ile Asn  
 245 250 255  
 Tyr Trp His Leu Glu Ala Pro Ser Gln Arg Arg Leu Arg Ser Pro Asn  
 260 265 270  
 Asp Asp Ile Ser Gly Tyr Lys Glu Asn Tyr Thr Arg Trp Leu Cys Tyr  
 275 280 285  
 Cys Asn Val Pro Gln Phe Cys Asp Ser Leu Pro Arg Tyr Glu Thr Thr  
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 Gln Val Phe Gly Arg Thr Leu Leu Arg Ser Val Phe Thr Val Met Arg  
 305 310 315 320  
 Arg Gln Leu Leu Glu Gln Ala Arg Gln Glu Lys Asp Lys Leu Pro Leu  
 325 330 335  
 Glu Lys Arg Thr Leu Ile Leu Thr His Phe Pro Lys Phe Leu Ser Met  
 340 345 350  
 Leu Glu Glu Val Tyr Ser Gln Asn Ser Pro Ile Trp Asp Gln Asp  
 355 360 365  
 Phe Leu Ser Ala Ser Ser Arg Thr Ser Gln Leu Gly Ile Gln Thr Val  
 370 375 380  
 Ile Asn Pro Pro Val Ala Gly Thr Ile Ser Tyr Asn Ser Thr Ser  
 385 390 395 400  
 Ser Ser Leu Glu Gln Pro Asn Ala Gly Ser Ser Ser Pro Ala Cys Lys  
 405 410 415  
 Ala Ser Ser Gly Leu Glu Ala Asn Pro Gly Glu Lys Arg Lys Met Thr  
 420 425 430  
 Asp Ser His Val Leu Glu Ala Lys Lys Pro Arg Val Met Gly Asp  
 435 440 445  
 Ile Pro Met Glu Leu Ile Asn Glu Val Met Ser Thr Ile Thr Asp Pro  
 450 455 460  
 Ala Ala Met Leu Gly Pro Glu Thr Asn Phe Leu Ser Ala His Ser Ala  
 465 470 475 480

Arg Asp Glu Ala Ala Arg Leu Glu Glu Arg Arg Gly Val Ile Glu Phe  
 485 490 495  
 His Val Val Gly Asn Ser Leu Asn Gln Lys Pro Asn Lys Lys Ile Leu  
 500 505 510  
 Met Trp Leu Val Gly Leu Gln Asn Val Phe Ser His Gln Leu Pro Arg  
 515 520 525  
 Met Pro Lys Glu Tyr Ile Thr Arg Leu Val Phe Asp Pro Lys His Lys  
 530 535 540  
 Thr Leu Ala Leu Ile Lys Asp Gly Arg Val Ile Gly Gly Ile Cys Phe  
 545 550 555 560  
 Arg Met Phe Pro Ser Gln Gly Phe Thr Glu Ile Val Phe Cys Ala Val  
 565 570 575  
 Thr Ser Asn Glu Gln Val Lys Gly Tyr Gly Thr His Leu Met Asn His  
 580 585 590  
 Leu Lys Glu Tyr His Ile Lys His Asp Ile Leu Asn Phe Leu Thr Tyr  
 595 600 605  
 Ala Asp Glu Tyr Ala Ile Gly Tyr Phe Lys Lys Gln Gly Phe Ser Lys  
 610 615 620  
 Glu Ile Lys Ile Pro Lys Thr Lys Tyr Val Gly Tyr Ile Lys Asp Tyr  
 625 630 635 640  
 Glu Gly Ala Thr Leu Met Gly Cys Glu Leu Asn Pro Arg Ile Pro Tyr  
 645 650 655  
 Thr Glu Phe Ser Val Ile Ile Lys Lys Gln Lys Glu Ile Ile Lys Lys  
 660 665 670  
 Leu Ile Glu Arg Lys Gln Ala Gln Ile Arg Lys Val Tyr Pro Gly Leu  
 675 680 685  
 Ser Cys Phe Lys Asp Gly Val Arg Gln Ile Pro Ile Glu Ser Ile Pro  
 690 695 700  
 Gly Ile Arg Glu Thr Gly Trp Lys Pro Ser Gly Lys Glu Lys Ser Lys  
 705 710 715 720  
 Glu Pro Arg Asp Pro Asp Gln Leu Tyr Ser Thr Leu Lys Ser Ile Leu  
 725 730 735  
 Gln Gln Val Lys Ser His Gln Ser Ala Trp Pro Phe Met Glu Pro Val  
 740 745 750  
 Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Phe Pro Met  
 755 760 765  
 Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr Val Ser  
 770 775 780

Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn Cys Lys  
 785 790 795 800  
 Glu Tyr Asn Ala Ala Glu Ser Glu Tyr Tyr Lys Cys Ala Asn Ile Leu  
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<210> 3

<211> 25

<212> PRT

<213> Artificial Sequence

<220>  
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<220>

<221> MOD\_RES

<222> (2)..(4)

<223> Any amino acid; this range may encompass 2-3 residues

<220>

<221> MOD\_RES

<222> (6)..(13)

<223> Any amino acid; this range may encompass 5-8 residues

<220>

<221> MOD\_RES

<222> (14)

<223> Pro, Lys or His

<220>

<221> MOD\_RES

<222> (15)

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<220>

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<222> (17)

<223> Pro, Lys or His

<220>

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<222> (18)..(22)

<223> Any amino acid

<220>

<221> MOD\_RES

<222> (24)

<223> Met, Ile or Val

<400> 3 Xaa Tyr

Phe Xaa Xaa Xaa Pro Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa 15

5

1

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<210> 5  
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<220>  
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 <212> PRT  
 <213> Homo sapiens

<220>  
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 20 25 30  
 Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Ser  
 35 40 45  
 Pro Met Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr  
 50 55 60  
 Val Ser Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn  
 65 70 75 80  
 Cys Lys Glu Tyr Asn Ala Pro Glu Ser Glu Tyr Tyr Lys Cys Ala Asn  
 85 90 95  
 Ile Leu Glu Lys Phe Phe Ser Lys Ile Lys Glu Ala Gly  
 100 105 110

<210> 8  
 <211> 110  
 <212> PRT  
 <213> Homo sapiens

<400> 8  
 Gly Lys Glu Leu Lys Asp Pro Asp Gln Leu Tyr Thr Leu Lys Asn  
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 Pro Val Lys Lys Ser Glu Ala Pro Asp Tyr Tyr Glu Val Ile Arg Phe  
 35 40 45  
 Pro Ile Asp Leu Lys Thr Met Thr Glu Arg Leu Arg Ser Arg Tyr Tyr  
 50 55 60  
 Val Thr Arg Lys Leu Phe Val Ala Asp Leu Gln Arg Val Ile Ala Asn  
 65 70 75 80  
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 85 90 95  
 Ala Leu Glu Lys Phe Phe Tyr Phe Lys Leu Lys Glu Gly Gly  
 100 105 110

<210> 9  
 <211> 109  
 <212> PRT  
 <213> Tetrahymena thermophila

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Ile Glu Asn Met Lys Arg His Lys Gln Ser Trp Pro Phe Leu Asp Pro  
 20 25 30

Val Asn Lys Asp Asp Val Pro Asp Tyr Tyr Asp Val Ile Thr Asp Pro  
 35 40 45

Ile Asp Ile Lys Ala Ile Glu Lys Lys Leu Gln Asn Asn Gln Tyr Val  
 50 55 60

Asp Lys Asp Gln Phe Ile Lys Asp Val Lys Arg Ile Phe Thr Asn Ala  
 65 70 75 80

Lys Ile Tyr Asn Gln Pro Asp Thr Ile Tyr Tyr Lys Ala Ala Lys Glu  
 85 90 95

Leu Glu Asp Phe Val Glu Pro Tyr Leu Thr Lys Leu Lys  
 100 105

<210> 10  
 <211> 109  
 <212> PRT  
 <213> Saccharomyces cerevisiae

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 Ala Gln Arg Pro Lys Arg Gly Pro His Asp Ala Ala Ile Gln Asn Ile  
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Leu Thr Glu Leu Gln Asn His Ala Ala Ala Trp Pro Phe Leu Gln Pro  
 20 25 30

Val Asn Lys Glu Glu Val Pro Asp Tyr Tyr Asp Phe Ile Lys Glu Pro  
 35 40 45

Met Asp Leu Ser Thr Met Glu Ile Lys Leu Glu Ser Asn Lys Tyr Gln  
 50 55 60

Lys Met Glu Asp Phe Ile Tyr Asp Ala Arg Leu Val Phe Asn Asn Cys  
 65 70 75 80

Arg Met Tyr Asn Gly Glu Asn Thr Ser Tyr Tyr Lys Tyr Ala Asn Arg  
 85 90 95

Leu Glu Lys Phe Phe Asn Asn Lys Val Lys Glu Ile Pro  
 100 105

<210> 11  
 <211> 112  
 <212> PRT  
 <213> Homo sapiens

<400> 11  
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 Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val  
 35 40 45  
 Lys Ser Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly  
 50 55 60  
 Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Ile Trp Leu Met Phe  
 65 70 75 80  
 Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Tyr  
 85 90 95  
 Cys Ser Lys Leu Ser Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met  
 100 105 110

<210> 12  
 <211> 112  
 <212> PRT  
 <213> Homo sapiens

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 Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val  
 35 40 45  
 Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly  
 50 55 60  
 Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Trp Leu Met Phe  
 65 70 75 80  
 Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe  
 85 90 95  
 Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met  
 100 105 110

<210> 13  
 <211> 112

&lt;212&gt; PRT

<213> *Mus musculus*

&lt;400&gt; 13

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Leu	Glu	Ala	Leu	Tyr	Arg	Gln	Asp	Pro	Glu	Ser	Leu	Pro	Phe	Arg	Gln
	20				25							30			

Pro	Val	Asp	Pro	Gln	Leu	Leu	Gly	Ile	Pro	Asp	Tyr	Phe	Asp	Ile	Val
	35				40			45							

Lys	Asn	Pro	Met	Asp	Leu	Ser	Thr	Ile	Lys	Arg	Lys	Leu	Asp	Thr	Gly
	50				55			60							

Gln	Tyr	Gln	Glu	Pro	Trp	Gln	Tyr	Val	Asp	Asp	Val	Arg	Leu	Met	Phe
65				70			75				80				

Asn	Asn	Ala	Trp	Leu	Tyr	Asn	Arg	Lys	Thr	Ser	Arg	Val	Tyr	Lys	Phe
	85				90				95						

Cys	Ser	Lys	Leu	Ala	Glu	Val	Phe	Glu	Gln	Glu	Ile	Asp	Pro	Val	Met
	100				105						110				

&lt;210&gt; 14

&lt;211&gt; 111

&lt;212&gt; PRT

<213> *Caenorhabditis elegans*

&lt;400&gt; 14

Asp	Thr	Val	Phe	Ser	Gln	Glu	Asp	Leu	Ile	Lys	Phe	Leu	Leu	Pro	Val
1				5			10			15					

Trp	Glu	Lys	Leu	Asp	Lys	Ser	Glu	Asp	Ala	Ala	Pro	Phe	Arg	Val	Pro
	20				25				30						

Val	Asp	Ala	Lys	Leu	Leu	Asn	Ile	Pro	Asp	Tyr	His	Glu	Ile	Ile	Lys
	35				40			45							

Arg	Pro	Met	Asp	Leu	Glu	Thr	Val	His	Lys	Lys	Leu	Tyr	Ala	Gly	Gln
	50				55			60							

Tyr	Gln	Asn	Ala	Gly	Gln	Phe	Cys	Asp	Asp	Ile	Trp	Leu	Met	Leu	Asp
65					70			75			80				

Asn	Ala	Trp	Leu	Tyr	Asn	Arg	Lys	Asn	Ser	Lys	Val	Tyr	Lys	Tyr	Gly
	85				90				95						

Leu	Lys	Leu	Ser	Glu	Met	Phe	Val	Ser	Glu	Met	Asp	Pro	Val	Met
	100			105				110						

&lt;210&gt; 15

&lt;211&gt; 110

&lt;212&gt; PRT

<213> *Homo sapiens*

&lt;400&gt; 15

Arg	Arg	Arg	Thr	Asp	Pro	Met	Val	Thr	Leu	Ser	Ser	Ile	Leu	Glu	Ser
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Ile	Ile	Asn	Asp	Met	Arg	Asp	Leu	Pro	Asn	Thr	Tyr	Pro	Phe	His	Thr
															30

Pro	Val	Asn	Ala	Lys	Val	Val	Lys	Asp	Tyr	Tyr	Lys	Ile	Ile	Thr	Arg
															45

Pro	Met	Asp	Leu	Gln	Thr	Leu	Arg	Glu	Asn	Val	Arg	Lys	Arg	Leu	Tyr
															60

Pro	Ser	Arg	Glu	Glu	Phe	Arg	Glu	His	Leu	Glu	Leu	Ile	Val	Lys	Asn
															80

Ser	Ala	Thr	Tyr	Asn	Gly	Pro	Lys	His	Ser	Leu	Thr	Gln	Ile	Ser	Gln
															95

Ser	Met	Leu	Asp	Leu	Cys	Asp	Glu	Lys	Leu	Lys	Glu	Lys	Glu		
															110

&lt;210&gt; 16

&lt;211&gt; 110

&lt;212&gt; PRT

&lt;213&gt; Mesocricetus auratus

&lt;400&gt; 16

Arg	Arg	Arg	Thr	Asp	Pro	Met	Val	Thr	Leu	Ser	Ser	Ile	Leu	Glu	Ser
1															15

Ile	Ile	Asn	Asp	Met	Arg	Asp	Leu	Pro	Asn	Thr	Tyr	Pro	Phe	His	Thr
															30

Pro	Val	Asn	Ala	Lys	Val	Val	Lys	Asp	Tyr	Tyr	Lys	Ile	Ile	Thr	Arg
															45

Pro	Met	Asp	Leu	Gln	Thr	Leu	Arg	Glu	Asn	Val	Arg	Lys	Arg	Leu	Tyr
															60

Pro	Ser	Arg	Glu	Glu	Phe	Arg	Glu	His	Leu	Glu	Leu	Ile	Val	Lys	Asn
															80

Ser	Ala	Thr	Tyr	Asn	Gly	Pro	Lys	His	Ser	Leu	Thr	Gln	Ile	Ser	Gln
															95

Ser	Met	Leu	Asp	Leu	Cys	Asp	Glu	Lys	Leu	Lys	Glu	Lys	Glu		
															110

&lt;210&gt; 17

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 17

Leu	Leu	Asp	Asp	Asp	Asp	Gln	Val	Ala	Phe	Ser	Phe	Ile	Leu	Asp	Asn
1						5			10				15		

Ile	Val	Thr	Gln	Lys	Met	Met	Ala	Val	Pro	Asp	Ser	Trp	Pro	Phe	His
	20						25					30			

His	Pro	Val	Asn	Lys	Lys	Phe	Val	Pro	Asp	Tyr	Tyr	Lys	Val	Ile	Val
			35			40						45			

Asn	Pro	Met	Asp	Leu	Glu	Thr	Ile	Arg	Lys	Asn	Ile	Ser	Lys	His	Lys
	50				55					60					

Tyr	Gln	Ser	Arg	Glu	Ser	Phe	Leu	Asp	Asp	Val	Asn	Leu	Ile	Leu	Ala
65				70				75			80				

Asn	Ser	Val	Lys	Tyr	Asn	Gly	Pro	Glu	Ser	Gln	Tyr	Thr	Lys	Thr	Ala
	85				90					95					

Gln	Glu	Ile	Val	Asn	Val	Cys	Tyr	Gln	Thr	Leu	Thr	Glu	Tyr	Asp
	100				105					110				

&lt;210&gt; 18

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Mesocricetus auratus

&lt;400&gt; 18

Leu	Leu	Asp	Asp	Asp	Asp	Gln	Val	Ala	Phe	Ser	Phe	Ile	Leu	Asp	Asn
1						5			10			15			

Ile	Val	Thr	Gln	Lys	Met	Met	Ala	Val	Pro	Asp	Ser	Trp	Pro	Phe	His
	20				25							30			

His	Pro	Val	Asn	Lys	Lys	Phe	Val	Pro	Asp	Tyr	Tyr	Lys	Val	Ile	Val
	35			40				45							

Ser	Pro	Met	Asp	Leu	Glu	Thr	Ile	Arg	Lys	Asn	Ile	Ser	Lys	His	Lys
	50				55					60					

Tyr	Gln	Ser	Arg	Glu	Ser	Phe	Leu	Asp	Asp	Val	Asn	Leu	Ile	Leu	Ala
65				70				75			80				

Asn	Ser	Val	Lys	Tyr	Asn	Gly	Ser	Glu	Ser	Gln	Tyr	Thr	Lys	Thr	Ala
	85				90					95					

Gln	Glu	Ile	Val	Asn	Val	Cys	Tyr	Gln	Thr	Leu	Thr	Glu	Tyr	Asp
	100				105					110				

&lt;210&gt; 19

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 19

Lys	Pro	Gly	Arg	Val	Thr	Asn	Gln	Leu	Gln	Tyr	Leu	His	Lys	Val	Val
1				5					10				15		

Met	Lys	Ala	Leu	Trp	Lys	His	Gln	Phe	Ala	Trp	Pro	Phe	Arg	Gln	Pro
				20				25				30			

Val	Asp	Ala	Val	Lys	Leu	Gly	Leu	Pro	Asp	Tyr	His	Lys	Ile	Ile	Lys
				35			40				45				

Gln	Pro	Met	Asp	Met	Gly	Thr	Ile	Lys	Arg	Arg	Leu	Glu	Asn	Asn	Tyr
				50			55				60				

Tyr	Trp	Ala	Ala	Ser	Glu	Cys	Met	Gln	Asp	Phe	Asn	Thr	Met	Phe	Thr
				65			70			75			80		

Asn	Cys	Tyr	Ile	Tyr	Asn	Lys	Pro	Thr	Asp	Asp	Ile	Val	Leu	Met	Ala
				85				90				95			

Gln	Thr	Leu	Glu	Lys	Ile	Phe	Leu	Gln	Lys	Val	Ala	Ser	Met	Pro
				100			105				110			

&lt;210&gt; 20

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 20

Lys	Pro	Gly	Arg	Lys	Thr	Asn	Gln	Leu	Gln	Tyr	Met	Gln	Asn	Val	Val
1				5				10			15				

Val	Lys	Thr	Leu	Trp	Lys	His	Gln	Phe	Ala	Trp	Pro	Phe	Tyr	Gln	Pro
				20				25				30			

Val	Asp	Ala	Ile	Lys	Leu	Asn	Leu	Pro	Asp	Tyr	His	Lys	Ile	Ile	Lys
				35			40			45					

Asn	Pro	Met	Asp	Met	Gly	Thr	Ile	Lys	Lys	Arg	Leu	Glu	Asn	Asn	Tyr
				50			55			60					

Tyr	Trp	Ser	Ala	Ser	Glu	Cys	Met	Gln	Asp	Phe	Asn	Thr	Met	Phe	Thr
				65			70			75			80		

Asn	Cys	Tyr	Ile	Tyr	Asn	Lys	Pro	Thr	Asp	Asp	Ile	Val	Leu	Met	Ala
				85				90				95			

Gln	Ala	Leu	Glu	Lys	Ile	Phe	Leu	Gln	Lys	Val	Ala	Gln	Met	Pro
				100			105				110			

&lt;210&gt; 21

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Drosophila melanogaster

<400> 21

Arg	Pro	Gly	Arg	Asn	Thr	Asn	Gln	Leu	Gln	Tyr	Leu	Ile	Lys	Thr	Val
1				5					10				15		

Met Lys Val Ile Trp Lys His His Phe Ser Trp Pro Phe Gln Gln Pro

20				25						30					
----	--	--	--	----	--	--	--	--	--	----	--	--	--	--	--

Val Asp Ala Lys Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys

35				40						45					
----	--	--	--	----	--	--	--	--	--	----	--	--	--	--	--

Gln Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr

50				55					60						
----	--	--	--	----	--	--	--	--	----	--	--	--	--	--	--

Tyr Trp Ser Ala Lys Glu Thr Ile Gln Asp Phe Asn Thr Met Phe Asn

65				70					75				80		
----	--	--	--	----	--	--	--	--	----	--	--	--	----	--	--

Asn Cys Tyr Val Tyr Asn Lys Pro Gly Glu Asp Val Val Val Met Ala

85				90					95						
----	--	--	--	----	--	--	--	--	----	--	--	--	--	--	--

Gln Thr Leu Glu Lys Val Phe Leu Gln Lys Ile Glu Ser Met Pro

100				105					110						
-----	--	--	--	-----	--	--	--	--	-----	--	--	--	--	--	--

<210> 22

<211> 109

<212> PRT

<213> *Saccharomyces cerevisiae*

<400> 22

Asn	Pro	Ile	Pro	Lys	His	Gln	Gln	Lys	His	Ala	Leu	Leu	Ala	Ile	Lys
1				5					10				15		

Ala Val Lys Arg Leu Lys Asp Ala Arg Pro Phe Leu Gln Pro Val Asp

20				25					30						
----	--	--	--	----	--	--	--	--	----	--	--	--	--	--	--

Pro Val Lys Leu Asp Ile Pro Phe Tyr Phe Asn Tyr Ile Lys Arg Pro

35				40					45						
----	--	--	--	----	--	--	--	--	----	--	--	--	--	--	--

Met Asp Leu Ser Thr Ile Glu Arg Lys Leu Asn Val Gly Ala Tyr Glu

50				55					60						
----	--	--	--	----	--	--	--	--	----	--	--	--	--	--	--

Val Pro Glu Gln Ile Thr Glu Asp Phe Asn Leu Met Val Asn Asn Ser

65				70					75				80		
----	--	--	--	----	--	--	--	--	----	--	--	--	----	--	--

Ile Lys Phe Asn Gly Pro Asn Ala Gly Ile Ser Gln Met Ala Arg Asn

85				90					95						
----	--	--	--	----	--	--	--	--	----	--	--	--	--	--	--

Ile Gln Ala Ser Phe Glu Lys His Met Leu Asn Met Pro

100				105											
-----	--	--	--	-----	--	--	--	--	--	--	--	--	--	--	--

<210> 23

<211> 113

<212> PRT

<213> *Homo sapiens*

&lt;400&gt; 23

Lys	Lys	Gly	Lys	Leu	Ser	Glu	Gln	Leu	Lys	His	Cys	Asn	Gly	Ile	Leu
1				5				10						15	

Lys	Glu	Leu	Leu	Ser	Lys	Lys	His	Ala	Ala	Tyr	Ala	Trp	Pro	Phe	Tyr
	20					25						30			

Lys	Pro	Val	Asp	Ala	Ser	Ala	Leu	Gly	Leu	His	Asp	Tyr	His	Asp	Ile
	35					40					45				

Ile	Lys	His	Pro	Met	Asp	Leu	Ser	Thr	Val	Lys	Arg	Lys	Met	Glu	Asn
	50					55				60					

Arg	Asp	Tyr	Arg	Asp	Ala	Gln	Glu	Phe	Ala	Ala	Asp	Val	Arg	Leu	Met
65					70				75			80			

Phe	Ser	Asn	Cys	Tyr	Lys	Tyr	Asn	Pro	Pro	Asp	His	Asp	Val	Val	Ala
					85				90			95			

Met	Ala	Arg	Lys	Leu	Gln	Asp	Val	Phe	Glu	Phe	Arg	Tyr	Ala	Lys	Met
				100			105				110				

Pro

&lt;210&gt; 24

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 24

Lys	Lys	Gly	Lys	Leu	Ser	Glu	His	Leu	Arg	Tyr	Cys	Asp	Ser	Ile	Leu
1				5				10					15		

Arg	Glu	Met	Leu	Ser	Lys	Lys	His	Ala	Ala	Tyr	Ala	Trp	Pro	Phe	Tyr
			20			25					30				

Lys	Pro	Val	Asp	Ala	Glu	Ala	Leu	Glu	Leu	His	Asp	Tyr	His	Asp	Ile
			35			40				45					

Ile	Lys	His	Pro	Met	Asp	Leu	Ser	Thr	Val	Lys	Arg	Lys	Met	Asp	Gly
			50			55				60					

Arg	Glu	Tyr	Pro	Asp	Ala	Gln	Gly	Phe	Ala	Ala	Asp	Val	Arg	Leu	Met
65					70			75			80				

Phe	Ser	Asn	Cys	Tyr	Lys	Tyr	Asn	Pro	Pro	Asp	His	Glu	Val	Val	Ala
					85			90			95				

Met	Ala	Arg	Lys	Leu	Gln	Asp	Val	Phe	Glu	Met	Arg	Phe	Ala	Lys	Met
				100			105			110					

Pro

&lt;210&gt; 25

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; Drosophila melanogaster

&lt;400&gt; 25

Asn	Lys	Glu	Lys	Leu	Ser	Asp	Ala	Leu	Lys	Ser	Cys	Asn	Glu	Ile	Leu
1				5					10					15	

Lys	Glu	Leu	Phe	Ser	Lys	Lys	His	Ser	Gly	Tyr	Ala	Trp	Pro	Phe	Tyr
				20				25					30		

Lys	Pro	Val	Asp	Ala	Glu	Met	Leu	Gly	Leu	His	Asp	Tyr	His	Asp	Ile
					35			40				45			

Ile	Lys	Lys	Pro	Met	Asp	Leu	Gly	Thr	Val	Lys	Arg	Lys	Met	Asp	Asn
					50			55			60				

Arg	Glu	Tyr	Lys	Ser	Ala	Pro	Glu	Phe	Ala	Ala	Asp	Val	Arg	Leu	Ile
					65			70			75		80		

Phe	Thr	Asn	Cys	Tyr	Lys	Tyr	Asn	Pro	Pro	Asp	His	Asp	Val	Val	Ala
					85			90			95				

Met	Gly	Arg	Lys	Leu	Gln	Asp	Val	Phe	Glu	Met	Arg	Tyr	Ala	Asn	Ile
					100			105			110				

Pro

&lt;210&gt; 26

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; Saccharomyces cerevisiae

&lt;400&gt; 26

Lys	Ser	Lys	Arg	Leu	Gln	Gln	Ala	Met	Lys	Phe	Cys	Gln	Ser	Val	Leu
1					5				10				15		

Lys	Glu	Leu	Met	Ala	Lys	Lys	His	Ala	Ser	Tyr	Asn	Tyr	Pro	Phe	Leu
					20			25				30			

Glu	Pro	Val	Asp	Pro	Val	Ser	Met	Asn	Leu	Pro	Thr	Tyr	Phe	Asp	Tyr
					35			40			45				

Val	Lys	Glu	Pro	Met	Asp	Leu	Gly	Thr	Ile	Ala	Lys	Lys	Leu	Asn	Asp
					50			55			60				

Trp	Gln	Tyr	Gln	Thr	Met	Glu	Asp	Phe	Glu	Arg	Glu	Val	Arg	Leu	Val
65					70				75			80			

Phe	Lys	Asn	Cys	Tyr	Thr	Phe	Asn	Pro	Asp	Gly	Thr	Ile	Val	Asn	Met
					85			90			95				

Met	Gly	His	Arg	Leu	Glu	Glu	Val	Phe	Asn	Ser	Lys	Trp	Ala	Asp	Arg
					100			105			110				

Pro

<210> 27  
 <211> 108  
 <212> PRT  
 <213> Homo sapiens

<400> 27  
 Met Glu Met Gln Leu Thr Pro Phe Leu Ile Leu Leu Arg Lys Thr Leu  
 1 5 10 15  
 Glu Gln Leu Gln Glu Lys Asp Thr Gly Asn Ile Phe Ser Glu Pro Val  
 20 25 30  
 Pro Leu Ser Glu Val Pro Asp Tyr Leu Asp His Ile Lys Lys Pro Met  
 35 40 45  
 Asp Phe Phe Thr Met Lys Gln Asn Leu Glu Ala Tyr Arg Tyr Leu Asn  
 50 55 60  
 Phe Asp Asp Phe Glu Glu Asp Phe Asn Leu Ile Val Ser Asn Cys Leu  
 65 70 75 80  
 Lys Tyr Asn Ala Lys Asp Thr Ile Phe Tyr Arg Ala Ala Val Arg Leu  
 85 90 95  
 Arg Glu Gln Gly Gly Ala Val Val Arg Gln Ala Arg  
 100 105

<210> 28  
 <211> 113  
 <212> PRT  
 <213> Homo sapiens

<400> 28  
 Ser Glu Asp Gln Glu Ala Ile Gln Ala Gln Lys Ile Trp Lys Lys Ala  
 1 5 10 15  
 Ile Met Leu Val Trp Arg Ala Ala Ala Asn His Arg Tyr Ala Asn Val  
 20 25 30  
 Phe Leu Gln Pro Val Thr Asp Asp Ile Ala Pro Gly Tyr His Ser Ile  
 35 40 45  
 Val Gln Arg Pro Met Asp Leu Ser Thr Ile Lys Lys Asn Ile Glu Asn  
 50 55 60  
 Gly Leu Ile Arg Ser Thr Ala Glu Phe Gln Arg Asp Ile Met Leu Met  
 65 70 75 80  
 Phe Gln Asn Ala Val Met Tyr Asn Ser Ser Asp His Asp Val Tyr His  
 85 90 95  
 Met Ala Val Glu Met Gln Arg Asp Val Leu Glu Gln Ile Gln Gln Phe  
 100 105 110  
 Leu

<210> 29  
 <211> 106  
 <212> PRT  
 <213> Gallus gallus

<400> 29  
 Asn Leu Pro Thr Val Asp Pro Ile Ala Val Cys His Glu Leu Tyr Asn  
 1 5 10 15  
 Thr Ile Arg Asp Tyr Lys Asp Glu Gln Gly Arg Leu Leu Cys Glu Leu  
 20 25 30  
 Phe Ile Arg Ala Pro Lys Arg Arg Asn Gln Pro Asp Tyr Tyr Glu Val  
 35 40 45  
 Val Ser Gln Pro Ile Asp Leu Met Lys Ile Gln Gln Lys Leu Lys Met  
 50 55 60  
 Glu Glu Tyr Asp Asp Val Asn Val Leu Thr Ala Asp Phe Gln Leu Leu  
 65 70 75 80  
 Phe Asn Asn Ala Lys Ala Tyr Tyr Lys Pro Asp Ser Pro Glu Tyr Lys  
 85 90 95  
 Ala Ala Cys Lys Leu Trp Glu Leu Tyr Leu  
 100 105

<210> 30  
 <211> 112  
 <212> PRT  
 <213> Gallus gallus

<400> 30  
 Ser Ser Pro Gly Tyr Leu Lys Glu Ile Leu Glu Gln Leu Leu Glu Ala  
 1 5 10 15  
 Val Ala Val Ala Thr Asn Pro Ser Gly Arg Leu Ile Ser Glu Leu Phe  
 20 25 30  
 Gln Lys Leu Pro Ser Lys Val Gln Tyr Pro Asp Tyr Tyr Ala Ile Ile  
 35 40 45  
 Lys Glu Pro Ile Asp Leu Lys Thr Ile Ala Gln Arg Ile Gln Asn Gly  
 50 55 60  
 Thr Tyr Lys Ser Ile His Ala Met Ala Lys Asp Ile Asp Leu Leu Ala  
 65 70 75 80  
 Lys Asn Ala Lys Thr Tyr Asn Glu Pro Gly Ser Gln Val Phe Lys Asp  
 85 90 95  
 Ala Asn Ala Ile Lys Lys Ile Phe Asn Met Lys Lys Ala Glu Ile Glu  
 100 105 110

<210> 31  
 <211> 112

&lt;212&gt; PRT

&lt;213&gt; Gallus gallus

&lt;400&gt; 31

Thr Ser Phe Met Asp Thr Ser Asn Pro Leu Tyr Gln Leu Tyr Asp Thr  
1 5 10 15Val Arg Ser Cys Arg Asn Asn Gln Gly Gln Leu Ile Ser Glu Pro Phe  
20 25 30Phe Gln Leu Pro Ser Lys Lys Tyr Pro Asp Tyr Tyr Gln Gln Ile  
35 40 45Lys Thr Pro Ile Ser Leu Gln Gln Ile Arg Ala Lys Leu Lys Asn His  
50 55 60Glu Tyr Glu Thr Leu Asp Gln Leu Glu Ala Asp Leu Asn Leu Met Phe  
65 70 75 80Glu Asn Ala Lys Arg Tyr Asn Val Pro Asn Ser Ala Ile Tyr Lys Arg  
85 90 95Val Leu Lys Met Gln Gln Val Met Gln Ala Lys Lys Lys Glu Leu Ala  
100 105 110

&lt;210&gt; 32

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; Gallus gallus

&lt;400&gt; 32

Ser Lys Lys Asn Met Arg Lys Gln Arg Met Lys Ile Leu Tyr Asn Ala  
1 5 10 15Val Leu Glu Ala Arg Glu Ser Gly Thr Gln Arg Arg Leu Cys Asp Leu  
20 25 30Phe Met Val Lys Pro Ser Lys Lys Asp Tyr Pro Asp Tyr Tyr Lys Ile  
35 40 45Ile Leu Glu Pro Met Asp Leu Lys Met Ile Glu His Asn Ile Arg Asn  
50 55 60Asp Lys Tyr Val Gly Glu Glu Ala Met Ile Asp Asp Met Lys Leu Met  
65 70 75 80Phe Arg Asn Ala Arg His Tyr Asn Glu Glu Gly Ser Gln Val Tyr Asn  
85 90 95Asp Ala His Met Leu Glu Lys Ile Leu Lys Glu Lys Arg Lys Glu Leu  
100 105 110

Gly

&lt;210&gt; 33

&lt;211&gt; 115

&lt;212&gt; PRT

&lt;213&gt; Gallus gallus

&lt;400&gt; 33

Lys	Lys	Ser	Lys	Tyr	Met	Thr	Pro	Met	Gln	Gln	Lys	Leu	Asn	Glu	Val
1				5				10						15	

Tyr	Glu	Ala	Val	Lys	Asn	Tyr	Thr	Asp	Lys	Arg	Gly	Arg	Arg	Leu	Ser
	20				25				30						

Ala	Ile	Phe	Leu	Arg	Leu	Pro	Ser	Arg	Ser	Glu	Leu	Pro	Asp	Tyr	Tyr
	35				40				45						

Ile	Thr	Ile	Lys	Lys	Pro	Val	Asp	Met	Glu	Lys	Ile	Arg	Ser	His	Met
	50				55				60						

Met	Ala	Asn	Lys	Tyr	Gln	Asp	Ile	Asp	Ser	Met	Val	Glu	Asp	Phe	Val
65				70				75			80				

Met	Met	Phe	Asn	Asn	Ala	Cys	Thr	Tyr	Asn	Glu	Pro	Glu	Ser	Leu	Ile
	85				90				95						

Tyr	Lys	Asp	Ala	Leu	Val	Leu	His	Lys	Val	Leu	Leu	Glu	Thr	Arg	Arg
	100				105							110			

Glu	Ile	Glu													
	115														

&lt;210&gt; 34

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Unknown Organism

&lt;220&gt;

<223> Description of Unknown Organism: see Jeanmougin et al.,															
Trends in Biochem. Sci.	22:151-153 (1997)														

&lt;400&gt; 34

His	Asn	Ala	Pro	Phe	Asp	Lys	Thr	Lys	Phe	Asp	Glu	Val	Leu	Glu	Ala
1			5			10					15				

Leu	Val	Gly	Leu	Lys	Asp	Asn	Glu	Gly	Asn	Pro	Phe	Asp	Asp	Ile	Phe
	20			25					30						

Glu	Glu	Leu	Pro	Ser	Lys	Arg	Tyr	Phe	Pro	Asp	Tyr	Tyr	Gln	Ile	Ile
	35			40							45				

Gln	Lys	Pro	Ile	Cys	Tyr	Lys	Met	Met	Arg	Asn	Lys	Ala	Lys	Thr	Gly
	50			55						60					

Lys	Tyr	Leu	Ser	Met	Gly	Asp	Phe	Tyr	Asp	Asp	Ile	Arg	Leu	Met	Val
65			70		75						80				

Ser	Asn	Ala	Gln	Thr	Tyr	Asn	Met	Pro	Gly	Ser	Leu	Val	Tyr	Glu	Cys
	85				90				95						

Ser Val Leu Ile Ala Asn Thr Ala Asn Ser Leu Glu Ser Lys Asp Gly  
 100 105 110

<210> 35

<211> 113

<212> PRT

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: see Jeanmougin et al.,  
 Trends in Biochem. Sci. 22:151-153 (1997)

<400> 35

Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp  
 1 5 10 15

Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile  
 20 25 30

Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile  
 35 40 45

Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys  
 50 55 60

Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met  
 65 70 75 80

Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu  
 85 90 95

Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe  
 100 105 110

Ser

<210> 36

<211> 113

<212> PRT

<213> Homo sapiens

<400> 36

Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp  
 1 5 10 15

Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile  
 20 25 30

Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile  
 35 40 45

Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys  
 50 55 60

Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met  
 65 70 75 80

Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu  
 85 90 95

Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Ser Leu Ile Ser Ser Phe  
 100 105 110

Ser

<210> 37  
 <211> 114  
 <212> PRT  
 <213> Homo sapiens

<400> 37  
 Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp  
 1 5 10 15

Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu  
 20 25 30

Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu  
 35 40 45

Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg  
 50 55 60

Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu  
 65 70 75 80

Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Leu Ile Tyr  
 85 90 95

Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys  
 100 105 110

Ile Glu

<210> 38  
 <211> 113  
 <212> PRT  
 <213> Gallus gallus

<400> 38  
 Ser Pro Asn Pro Pro Lys Leu Thr Lys Gln Met Asn Ala Ile Ile Asp  
 1 5 10 15

Thr Val Ile Asn Tyr Lys Asp Ser Ser Gly Arg Gln Leu Ser Glu Val  
 20 25 30

Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu Leu  
 35 40 45

Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg Asn  
 50 55 60

His Lys Tyr Arg Ser Leu Gly Asp Leu Glu Lys Asp Val Met Leu Leu  
 65 70 75 80

Cys His Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Gln Ile Tyr Glu  
 85 90 95

Asp Ser Ile Val Leu Gln Ser Val Phe Lys Ser Ala Arg Gln Lys Ile  
 100 105 110

Ala

<210> 39

<211> 114

<212> PRT

<213> Gallus gallus

<400> 39

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp  
 1 5 10 15

Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu  
 20 25 30

Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu  
 35 40 45

Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg  
 50 55 60

Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu  
 65 70 75 80

Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Val Ser Leu Ile Tyr  
 85 90 95

Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys  
 100 105 110

Ile Glu

<210> 40

<211> 105

<212> PRT

<213> Homo sapiens

<400> 40

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu  
 1 5 10 15

Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr  
 20 25 30

Asp Ser Thr Phe Ser Leu Asp Gln Pro Gly Gly Thr Leu Asp Leu Thr  
 35 40 45

Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser  
 50 55 60

Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn  
 65 70 75 80

Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln  
 85 90 95

Arg Phe Phe Glu Thr Arg Met Asn Glu  
 100 105

<210> 41

<211> 105

<212> PRT

<213> Mus musculus

<400> 41

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu  
 1 5 10 15

Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr  
 20 25 30

Asp Ser Thr Phe Ser Met Glu Gln Pro Gly Gly Thr Leu Asp Leu Thr  
 35 40 45

Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser  
 50 55 60

Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn  
 65 70 75 80

Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln  
 85 90 95

Arg Phe Phe Glu Thr Arg Met Asn Asp  
 100 105

<210> 42

<211> 108

<212> PRT

<213> Mus sp.

<400> 42

Thr Lys Leu Thr Pro Ile Asp Lys Arg Lys Cys Glu Arg Leu Leu Leu  
 1 5 10 15

Phe Leu Tyr Cys His Glu Met Ser Leu Ala Phe Gln Asp Pro Val Pro  
 20 25 30

Leu Thr Val Pro Asp Tyr Tyr Lys Ile Ile Lys Asn Pro Met Asp Leu  
 35 40 45

Ser Thr Ile Lys Lys Arg Leu Gln Glu Asp Tyr Cys Met Tyr Thr Lys  
 50 55 60

Pro Glu Asp Phe Val Ala Asp Phe Arg Leu Ile Phe Gln Asn Cys Ala  
65 70 75 80

Glu Phe Asn Glu Pro Asp Ser Glu Val Ala Asn Ala Gly Ile Lys Leu  
85 90 95

Glu Ser Tyr Phe Glu Glu Leu Leu Lys Asn Leu Tyr  
100 105

<210> 43

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic bromodomain peptide

<220>

<221> MOD\_RES

<222> (1)..(2)

<223> Any amino acid

<220>

<221> MOD\_RES

<222> (4)..(6)

<223> Any amino acid; this range may encompass 2-3 residues

<220>

<221> MOD\_RES

<222> (8)..(15)

<223> Any amino acid; this range may encompass 5-8 residues

<220>

<221> MOD\_RES

<222> (16)

<223> Pro, Lys or His

<220>

<221> MOD\_RES

<222> (17)

<223> Any amino acid

<220>

<221> MOD\_RES

<222> (19)

<223> Tyr, Phe or His

<220>

<221> MOD\_RES

<222> (20)..(24)

<223> Any amino acid

<220>

<221> MOD\_RES

<222> (26)

<223> Met, Ile or Val

&lt;400&gt; 43

Xaa	Xaa	Phe	Xaa	Xaa	Xaa	Pro	Xaa								
1				5				10							15

Xaa	Tyr	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Pro	Xaa	Asp
				20				25		

&lt;210&gt; 44

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; synthetic bromodomain peptide

&lt;400&gt; 44

Trp	Pro	Phe	Met	Glu	Pro	Val	Lys	Arg	Thr	Glu	Ala	Pro	Gly	Tyr	Tyr
1				5				10							15

Glu	Val	Ile	Arg
		20	

&lt;210&gt; 45

&lt;211&gt; 101

&lt;212&gt; PRT

&lt;213&gt; Human immunodeficiency virus type 1

&lt;220&gt;

&lt;223&gt; Tat protein

&lt;400&gt; 45

Met	Glu	Pro	Val	Asp	Pro	Arg	Leu	Glu	Pro	Trp	Lys	His	Pro	Gly	Ser
1				5				10							15

Gln	Pro	Lys	Thr	Ala	Ser	Asn	Asn	Cys	Tyr	Cys	Lys	Arg	Cys	Cys	Leu
		20						25				30			

His	Cys	Gln	Val	Cys	Phe	Thr	Lys	Lys	Gly	Leu	Gly	Ile	Ser	Tyr	Gly
	35						40					45			

Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Ala	Pro	Gln	Asp	Ser	Lys	Thr
	50				55					60					

His	Gln	Val	Ser	Leu	Ser	Lys	Gln	Pro	Ala	Ser	Gln	Pro	Arg	Gly	Asp
65				70				75					80		

Pro	Thr	Gly	Pro	Lys	Glu	Ser	Lys	Lys	Val	Glu	Arg	Glu	Thr	Glu	
				85				90				95			

Thr	Asp	Pro	Glu	Asp
		100		

&lt;210&gt; 46

&lt;211&gt; 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic HIV-1 Tat peptide

<220>

<221> MOD\_RES

<222> (5)..(7)

<223> Any amino acid

<400> 46

Tyr Gly Arg Lys Xaa Xaa Xaa Arg Gln

1

5

<210> 47

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic HIV-1 Tat peptide

<400> 47

Ser Tyr Gly Arg Lys Lys Arg Arg Gln Arg

1

5

10

<210> 48

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic HIV-1 Tat peptide

<220>

<221> MOD\_RES

<222> (2)..(5)

<223> Any amino acid; this range may encompass 2-4 residues

<220>

<221> MOD\_RES

<222> (7)..(10)

<223> Any amino acid; this range may encompass 2-4 residues

<220>

<221> MOD\_RES

<222> (12)..(15)

<223> Any amino acid; this range may encompass 2-4 residues

<220>

<221> MOD\_RES

<222> (17)..(19)

<223> Any amino acid; this range may encompass 1-3 residues

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (21)

&lt;223&gt; Ile, Leu, Met or Val

&lt;400&gt; 48

Phe	Xaa	Xaa	Xaa	Xaa	Val	Xaa	Xaa	Xaa	Xaa	Glu	Xaa	Xaa	Xaa	Xaa	Tyr
1					5					10					15

Xaa Xaa Xaa Val Xaa

20

&lt;210&gt; 49

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; synthetic bromodomain peptide

&lt;400&gt; 49

Phe	Met	Glu	Pro	Val	Lys	Arg	Thr	Glu	Ala	Pro	Gly	Tyr	Tyr	Glu	Val
1				5				10						15	

Ile	Arg	Phe	Pro	Met	Asp	Leu	Lys	Thr	Met	Ser	Glu	Arg	Leu	Lys	Asn
				20				25					30		

Arg	Tyr	Tyr	Val	Ser	Lys	Lys	Leu	Phe	Met	Ala	Asp	Leu	Gln	Arg	Val
				35				40				45			

Phe	Thr	Asn	Cys	Lys	Glu	Tyr	Asn	Ala	Ala	Glu	Ser	Glu	Tyr
50					55					60			

&lt;210&gt; 50

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; synthetic HIV-1 Tat peptide

&lt;220&gt;

&lt;221&gt; MOD\_RES

&lt;222&gt; (5)..(5)

&lt;223&gt; acetylated lysine

&lt;400&gt; 50

Ser	Tyr	Gly	Arg	Xaa	Lys	Arg	Arg	Gln	Arg	Cys
1				5				10		

&lt;210&gt; 51

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

<220>  
<223> synthetic HIV-1 Tat peptide

<220>  
<221> MOD\_RES  
<222> (5)..(5)  
<223> acetylated lysine

<400> 51  
Ser Ala Gly Arg Xaa Lys Arg Arg Gln Arg Cys  
1 5 10

<210> 52  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic HIV-1 Tat peptide

<220>  
<221> MOD\_RES  
<222> (5)..(5)  
<223> acetylated lysine

<400> 52  
Ser Tyr Gly Ala Xaa Lys Arg Arg Gln Arg Cys  
1 5 10

<210> 53  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic HIV-1 Tat peptide

<220>  
<221> MOD\_RES  
<222> (5)..(5)  
<223> acetylated lysine

<400> 53  
Ser Tyr Gly Arg Xaa Ala Arg Arg Gln Arg Cys  
1 5 10

<210> 54  
<211> 11  
<212> PRT  
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<220>  
<223> synthetic HIV-1 Tat peptide

<220>  
<221> MOD\_RES  
<222> (5)..(5)  
<223> acetylated lysine

<400> 54  
Ser Tyr Gly Arg Xaa Lys Ala Arg Gln Arg Cys  
1 5 10

<210> 55  
<211> 11  
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<220>  
<223> synthetic HIV-1 Tat peptide

<220>  
<221> MOD\_RES  
<222> (5)..(5)  
<223> acetylated lysine

<400> 55  
Ser Tyr Gly Arg Xaa Lys Arg Ala Gln Arg Cys  
1 5 10

<210> 56  
<211> 11  
<212> PRT  
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<220>  
<223> synthetic HIV-1 Tat peptide

<220>  
<221> MOD\_RES  
<222> (5)..(5)  
<223> acetylated lysine

<400> 56  
Ser Tyr Gly Arg Xaa Lys Arg Arg Ala Arg Cys  
1 5 10

<210> 57  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic HIV-1 Tat peptide

<220>  
<221> MOD\_RES  
<222> (6)..(6)  
<223> acetylated lysine

<400> 57  
Ser Tyr Gly Arg Lys Xaa Arg Arg Gln Arg Cys  
1 5 10

<210> 58  
<211> 11

<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic HIV-1 Tat peptide

<220>  
<221> MOD\_RES  
<222> (7)..(7)  
<223> acetylated lysine

<400> 58  
Thr Asn Cys Tyr Cys Lys Xaa Cys Cys Phe His  
1 5 10

<210> 59  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic histone H4 AcK16 peptide

<220>  
<221> MOD\_RES  
<222> (16)..(16)  
<223> acetylated lysine

<400> 59  
Ser Gly Arg Gly Lys Gly Gly Lys Gly Leu Gly Lys Gly Gly Ala Xaa  
1 5 10 15

Arg His Arg Lys  
20

<210> 60  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic HIV-1 Tat peptide

<400> 60  
Ser Tyr Gly Arg Lys Lys Arg Arg Gln Arg Cys  
1 5 10

<210> 61  
<211> 6  
<212> PRT  
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<220>  
<223> hexahistidine tag

<400> 61  
His His His His His His  
1 5

<210> 62  
<211> 12  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
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<220>  
<221> MOD\_RES  
<222> (8)  
<223> acetyl lysine

<400> 62  
Ser Gly Arg Gly Lys Gly Gly Xaa Gly Leu Gly Lys  
1 5 10

<210> 63  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<220>  
<221> MOD\_RES  
<222> (7)  
<223> acetyl lysine

<400> 63  
Arg Lys Ser Thr Gly Gly Xaa Ala Pro Arg Lys Gln  
1 5 10